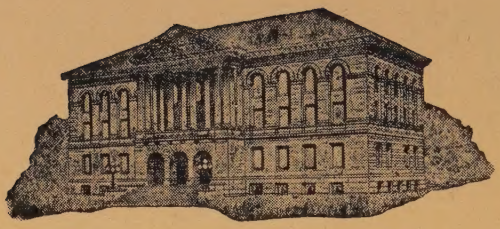
The CHICAGO NATURALIST

Published by

THE CHICAGO ACADEMY OF SCIENCES

VOL. 10 · NO. 3 & 4 ❖ ❖ MAY · 1948



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The Chicago Naturalist

Published four times a year by
THE CHICAGO ACADEMY OF SCIENCES
Lincoln Park - 2001 North Clark Street
CHICAGO 14, ILLINOIS

VOLUME 10 | MAY, 1948 | NUMBERS 3 & 4

Contents

Cover Design, *Fred H. Jaeger, Jr.*

Raising Raccoons Wholesale 35
Constance Nice

Illinois Wintergreens 39
George D. Fuller

The Naturalist (verse) 41
E. R. Ford

Late Spring in Arkansas 42
Margaret Morse Nice

Discovering Beauty 49
Samuel A. Harper

Notes from the Field 50

Museum Activities 51

The Naturalist's Book Shelf 55

Publication of

The CHICAGO NATURALIST

is suspended with this issue. This action by the Trustees and Scientific Governors was deemed necessary as a measure of economy. The income of the Academy during recent years has not kept pace with the increasing costs of operation. A consequent loss of personnel and curtailment of activities has resulted.

For more than ten years "The Naturalist" has been useful to the Academy as an outlet for non-technical articles and as a means of bringing the activities of the museum to the attention of those interested in natural history. We believe that it has been enjoyed and appreciated by members and friends of the organization. However, its preparation and publication are time-consuming and, under present conditions, inordinately costly. We hope that publication may be resumed when the Academy's financial resources have improved.

Nathan S. Davis, President,

Howard K. Gloyd, Director.

Raising Raccoons Wholesale

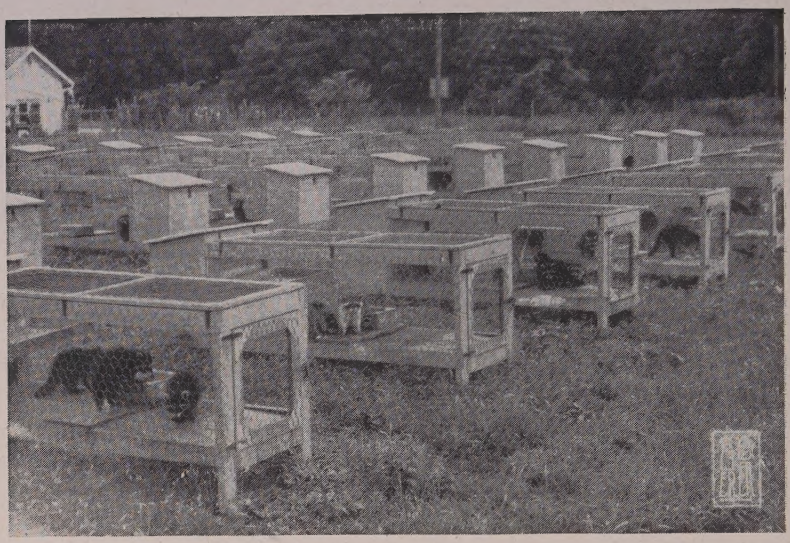
CONSTANCE NICE

Photographs by Walter M. Lauffer, Ohio Division of Conservation

Must we domesticate our wild animals in order to keep them with us? Does Science endorse mass production of raccoons as the best method of keeping up their numbers? With the growing pressure of hunting on game populations, this practice has become popular.

Just as Medicine is getting around to the investigation of the more common though less spectacular diseases, so the Science of Game Management is revealing the requirements of our native, but little understood, wild animals. Listening to Dr. Lawrence E. Hicks, dynamic young former director of the Ohio Wildlife Research Station, describe the discoveries of the staff, is enough to scotch any idea that this science is dry or impractical.

Many state game departments have become convinced that they are more efficient in raising raccoons than the female raccoons in the wild. The Ohio State Game Farm, for example, rears 2000 raccoons a year.



As the male coon takes no useful part in family life, he must be removed from the breeding pen before the young are born. Soon after their birth the game farm is likely to run into a difficulty that proves that domestication involves a long process of selection, at least for most species, and that a wild animal does not acquire the placidity of domestication merely by being born and raised in captivity. Mother raccoons are extremely sensitive to potential danger to the small young. If disturbed or excited by any unusual occurrence, one will grab the pup by the scruff of the neck.

In the wild such behavior must often save the lives of the young by removing them from the vicinity of a searching enemy to a safer refuge. In captivity, however, the mother finds no avenue towards escape. If she is not soon calmed, her anxious padding becomes such an obsession that she will carry the young around the cage for hours or days, until they become soaking wet, contract pneumonia, and die.

The only remedy, when she is well started on her endless pilgrimage, is to take the youngsters from her and raise them by hand. Mrs. Martin wife of the superintendent of the farm, has raised hundreds successfully on the bottle — as many as 86 in one year alone. The chief trick is to keep them dry, for in their enthusiasm they get the milk all over themselves. Even when with their mother they get themselves wet, but she manages somehow or other to dry them off, unless she is alarmed.

The young raccoons cannot be released in their first fall because they have not been equipped through maternal example and their own

experience to find their living and avoid the perils of the wild. For instance, they do not climb trees instinctively, and here, as elsewhere, it is practice that makes perfect.

On the game farm the first step in preparing them for independence is to put them in a large field where they can work off their baby fat and harden their muscles by exercise. The whole mob stampedes and rushes from one side of the field to the other in sheer high spirits; hundreds come tearing down the field when dinner is served. Soon they are transferred to a field with some trees, on which they practice climbing by the hour. A hundred little raccoons may be perched in one tree.

If the weather turns suddenly cold, they will curl up and hibernate wherever they happen to be in the trees — looking like a crop of huge chestnut burs. Protected by their thick layer of fat and heavy fur, they can sleep through the winter if they have a secure perch but if not, the first high wind will shake them out. A coon can fall an astonishing distance without apparent damage to himself, but many actually suffer internal injuries which eventually kill them. Getting the hibernating coons down from the trees is quite a job; the employees of the game farm shake them down into nets.

Dr. Martin plans to anticipate the first cold snap by providing slant-roofed wooden hibernating hutches on legs about a foot and a half above the ground. The animals enter through a hole in the floor and roll themselves up into dozens of furry balls. They do not lose weight as fast as if they were exposed to the weather, but if they are overcrowded, they become overheated, perspire, get chilled, and contract pneumonia.

It is really funny to open one of the hutches on a mild winter day. One moment the coons are piled in a heap, and the next moment they just boil out, cross the few yards to the next hutch on a dead run and shoot up into it, without even slackening their pace. This is fine unless the next hutch happens to be already full of coons and then there is trouble.

Dogs are excluded from the farm, so that the young coons will not become accustomed to them and lose their natural fear of strange animals. They become as timid as wild coons almost as soon as they are released in their second fall. How successfully they learn all the tricks of the trade — food and den finding and escape from enemies, we do not know.

Strangely enough, the wild raccoon is often undernourished because of seasonal concentration, first on one food, then another. Yet apparently he gets enough of one kind of vitamins and minerals while eating one kind of food to carry him later when eating largely another kind. Dr. Martin has worked out a balanced diet which produces a better coon than the wild one — of course, at much greater expense.

In some places the natural coon population is limited by lack of brood stock, in others by shortage of suitable dens—due in part to the practice of farmers and foresters of managing wood lots and forests for timber production alone. Even a raccoon must have a place to lay his head and something to eat, and he cannot live where his den trees and his beeches, dogwoods, juneberries, mulberries and tupelo are cut. The coons of the plains of northwestern Ohio have taken refuge in drainage pipes; this is hard both on the coons' fur and the stopped-up drainage tiles.

Dr. Floyd Chapman, in charge of forest wildlife management throughout Ohio, recommended after much research that ponds be made and stocked with crayfish and frogs for the special use of raccoons, and that nest boxes, where necessary, should be put up for them. There should be one den per acre.

Winter is the time to learn whether there are sufficient coons on your farm, if you are a landowner, or to persuade your farmer friends to help you provide nest boxes for them. Perhaps your local hunting club or Boy Scout Troop would like to make boxes. Instructions may be obtained from the Illinois State Natural History Survey at Urbana, Illinois.

To return to our original question. If game raccoons survive in the wild in similar proportions to brooder-raised game birds, then far fewer of them are successful than of their wild brothers. Dramatic as game farms are, wild life research has shown that it is more effective and cheaper to provide the proper natural environment and let the female of the species do the rest. After all, raising babies is her profession and she is an expert at her job.

Illinois Wintergreens

George D. Fuller*

Our wintergreens are northern plants, growing plentifully in Wisconsin and Michigan but are very rare when they are found in Illinois. They all belong to the heath family and all have rather thick leathery evergreen leaves that form loose rosettes at the base of the aerial stems. Most of them are small plants, seldom more than a foot tall blooming in June, producing racemes of white waxy fragrant flowers. The five petals form a cup about the ten stamens while a long curved style projects from the center of the flower. Three of these Illinois wintergreens belong to the genus *Pyrola.*

Long ago the round-leaved wintergreen *Pyrola americana*, was reported by Pepoon in his "Flora of the Chicago Area" as having been found by Johnson in the Niles Woods, Cook County, but as there seems to have been no specimen preserved in any herbarium the record must be doubted especially as no other collector has found the plant near that locality. Recently, however, the discovery of the plant, growing a hundred miles west of Chicago, has focused attention on this rare wintergreen.

On April 7, 1946, the writer, accompanied by Dr. E. W. Fell of Rockford was exploring a wooded area underlain by St. Peters Sandstone in Ogle County, some four miles southwest of Oregon, and there, on a sandy moss covered hillside was found a patch of evergreen leaves of a species of *Pyrola* that seemed different from the common elliptical wintergreen. Following up this discovery, Dr. Fell returned on June 28 of the same year and collected specimens in flower that proved, when carefully examined, to be the first recorded and verified occurrence of *Pyrola americana* Sweet in Illinois. This species may be distinguished from the other species of wintergreen by its more rounded leaves, shining above. The flowers are white, nodding, very fragrant, with calyx-lobes that are ovate and twice as long as wide. It is found from Nova Scotia to South Dakota and southward through Michigan to Ohio and Georgia. The following collections are in the herbarium of the Illinois State Museum, Springfield: April 7, 1946, G. D. Fuller *12102;* June 28, 1946, E. W. and G. B. Fell *46455.*

The shin-leaf or elliptical-leaved wintergreen, *Pyrola elliptica* L., has been found in half dozen counties of this state. Earlier collectors like Babcock. Bebb and Vasey found it in Cook, Lake, Winnebago and McHenry Counties. It seems to have disappeared from Cook, Lake and

*Illinois State Museum, Springfield, and the University of Chicago.

McHenry Counties but is to be found in Jo Daviess, Winnebago, Ogle and Lee Counties. It may be distinguised by its broadly oval rather thin dark green leaves, longer than the petioles, flowers with fragrant greenish-white petals with triangular calyx-lobes and blunt orange anthers. It has a wide distribution, occurring from Nova Scotia to British Columbia south to Michigan and Maryland and also in the Rocky Mountains to New Mexico. Recent collections are preserved in the Illinois State Museum: Jo Daviess County, June 16, 1945, G. D. Fuller *10498;* Lee County, Sept. 29, 1942, G. D. Fuller, *7465;* Ogle County, June 6, 1945, E. W. Fell *45185;* and August 10, 1946, E. W. Fell 46742.

The little one-sided wintergreen, *Pyrola secunda* L., was found in Cook County by Babcock more than 50 years ago and has not been seen in Illinois, according to the records, until 1945 when it was discovered near Roscoe in Winnebago County. The small thin rounded leaves have serrulate margins and are narrowed at the base and the small greenish-white flowers are arranged in a one-sided raceme which is seldom more than 4 inches tall. Its distribution is like that of *Pyrola elliptica* except that it goes much farther north occurring in Labrador and Alaska. Collections may be seen in the herbarium of the Illinois State Museum: Winnebago County, January 10, 1946, E. W. Fell *45925;* April 6, 1946, G. D. Fuller *12129.*

A fourth species, the bog wintergreen, *Pyrola uliginosa* Torr. has been reported from McHenry County. The specimen on which the report was based was collected by Dr. George Vasey in 1864, and was named *Pyrola elliptica* by the collector, but was redetermined by Lansing as *Pyrola uliginosa.* Recently Prof. G. Neville Jones has re-examined the plant and he has supported the original collector's identification. The specimen is immature and is preserved in the herbarium of the University of Illinois at Urbana.

Closely related to the Pyrolas is the bitter wintergreen or pipsissewa, *Chimaphila corymbosa* Pursh, also called prince's pine, with a trailing stem sending up aerial branches bearing bright shining spatulate evergreen leaves and an umbellate cluster of a few flowers. The flowers are waxy white tinged with pink. It is very rare in Illinois and has a similar range to the elliptical wintergreen. While it was reported from Jo Daviess County by the late Dr. H. S. Pepoon there seems to have been no specimen in the herbaria accessible to the writer until it was rediscovered in Winnebago County, near Roscoe, in 1945 and collections are preserved in the Illinois State Museum: June 28, 1945, E. W. Fell *45302;* August 4, 1945, G. D. Fuller *10850.*

Finally there is the aromatic wintergreen, *Gaultheria procumbens* L., that produces an abundance of red "checker berries" in Wisconsin and Michigan but which has almost completely disappeared from Illinois.

There seems to be only two known collections of this plant from Illinois and they are those of Paul Blatchford, No. 2543, found near Glencoe in August 8, 1873 and that collected by Gordon Pearsall, No. 8334, August 4, 1943 in Elk Grove, Cook County.

The Naturalist

Over and over the night comes in,
  Over and over the mornings rise,
Again and again is the wonder wrought
  And the marvel enacted before his eyes.

Forever and ever the secret is hid;
  They babble of mystery, bee and bird:
He listens entranced to their jargoning
  But listens in vain for a clearer word.

Forever to seek and forever to ask—
  What if his labor is never done?
Labor entrancing is never a task:
  Other reward, let it be, there is none.

E. R. Ford.

Late Spring in Arkansas

Margaret Morse Nice

Photographs by Rodney Parham, Little Rock, Arkansas

In mid April 1946 I traveled south from Chicago just as the trees were greening and redbud and wild plum were in bloom; I woke the next morning in Arkansas to what seemed like June. Illinois had been too cultivated, so clean-farmed that hardly a sprig was left under which a bobwhite might hide. It was a delight to find in Arkansas woods and underbrush and wild land and American egrets silhouetted against cypress trees. Past blooming roses and honey-suckles, red horse-chestnut bushes and lavender china berries, we drove out from Little Rock to Crip's Hill with its post oaks and black jacks, its shrubs and rose bushes, its wealth of bird houses and feeding shelves. Everywhere there were birds, most of them banded with numbered aluminum rings, while many had in addition colored celluloid bands for sight identification.

Instead of the noises of civilization—trains, autos, English sparrows and starlings—I listened to the sounds of nature. At dawn the exquisite chorus of white-throated sparrows, the spirited song of the cardinal, the outpourings of the unmated brown thrasher to the west; throughout the day the ringing calls of the ancient Carolina wren who sought a wife, the beautiful melody of the mourning dove, the husky warble of the Lincoln sparrow, the conversations of blue jays, the lonely call of the tufted tit that had lost his mate, the mad, gay twitterings of the chimney swifts, and always a soft undertone of insect voices; and after nightfall the concert of swamp tree frogs and the musical cry of chuck-will's-widow that took me back to camping days in Oklahoma.

I was eager to see Crip, the famous ten-year-old brown thrasher, chief character of Ruth Thomas' weekly "Country Diary" in the Arkansas Gazette; he had broken his wing six years before and could fly only with difficulty. He and his three-year-old mate had a nest in the silver moon rose bush near the house; when she left the eggs, he took her place, each bird on the nest singing softly upon the arrival of its mate. The north garden belonged to another pair of thrashers—Red and Greta—each five years old; Greta had been Crip's mate for two seasons, but the third year Crip returned late to his hill and found wife and territory in possession of his neighbor.

My hostess showed me nests: Bewick wrens with six babies, tufted tits with seven, and cardinals (both parents banded as juveniles in 1941) with three, while bluebirds had four eggs. The male of this pair, unlike

most of his kind, was assiduous in feeding his mate. Blue jays were nesting in the post oak next to the sleeping porch, and quiet and peaceable neighbors they were, although, because of their mighty appetites for peanut butter, we did not welcome them at the feeding shelves.

In this haven where birds were attracted with skill and devotion, and where many of their enemies—cats, English sparrows and some of the snakes—were eliminated, the population was remarkably stable and many of the inhabitants were old acquaintances: wintering white-throats that came three, four and six years in succession, red-bellied woodpeckers three years old, an orchard oriole seven years old, and a male cardinal at least ten years old. The trapping of a bird was always an occasion of excitement; perhaps the captive was an old friend, while with the nesting birds where male and female look alike, sex could often be determined by examination for the brood patch, a large granulated bare place on the abdomen of an incubating bird. We found it in females in the titmice, chickadees, wrens and jays, and in both sexes in the woodpeckers.

On April 19th, Ancient, the six year old Carolina wren, won a bride, a newcomer to Crip's Hill. Without delay they started nest-hunting and Mrs. Thomas cleverly lured them to a grape basket, partly covered with a shingle, on the sleeping porch. On Sunday morning—the 21st—the two little birds worked with furious zeal; from 8 to 10 the bride brought 104 loads and Ancient 205 the fastest building I had ever seen. After that Ancient let his wife finish lining the nest. She even continued to bring wisps of hair when she came each morning half an hour after sunrise to lay an egg, and later on occasion while she incubated. Ancient sang and guarded, and occasionally brought his wife a tidbit; he scolded at blue jays, and chased the little unmated Bewick wren building a nest nearby.

Leaving our oak hill top, we were taken by the Terrel Marshalls to their cottage at Lakeside, twenty-four miles northwest of Little Rock. It was a different world—cypress and sweet gum, short-leaved and loblolly pines, willow- and water- and southern red-oak, brake and royal fern. Anhingas live on the lake and red-cockaded woodpeckers in the pine woods. White water lilies were in bloom, cricket and bull frogs were vocal, and prothonotary and sycamore warblers sang. From the cottage porch we watched kingbirds over the lake, saw a white-breasted nuthatch feed his mate and a beautiful summer tanager take a bath while chipping sparrows came for crumbs. Deeper in the woods at the cabin of Glenn and Ann Hoke we listened to the absurd song of the white-eyed vireo and lovely notes of the wood thrush. We heard tufted tits calling in a different dialect from those on Crip's Hill, and were happy to find a blue-gray gnatcatcher on her exquisite nest.

Another trip—twenty-four miles east this time—took us through rice country to the "World's Largest Fish Hatchery" at Lonoke. On the way, fields of vetch were noisy with dickcissels, while Hill's Lake was a joy to behold with its wealth of lovely cypress, not draped, as in Louisiana, with Spanish moss. The hatchery is landscaped with weeping willows which give an exotic effect. Warbling vireos, Maryland yellow-throats, grackles and redwings were all abundant; graceful black terns coursed over the water and a Bell vireo gave his earnest song.

Graceful cypresses at Hill's Lake.

We wandered about, admiring great dragonflies and the prettiest baby Cumberland turtles. In one pond we noticed myriads of tiny black tadpoles that acted like no tadpoles we had ever seen before, for they *schooled.* Presently a large catfish appeared, swimming slowly about. This made us wonder; were they really tadpoles? We caught one and could just make out tiny "whiskers" and tiny fins. It was fascinating to watch these baby fish, as they separated, then joined and milled about together in an extraordinary writhing black ball. Father catfish returned and hovered over one school, but the other group divided itself into three balls and benefited from no parental interest as long as we watched. It was a glimpse into a new world for us.

On a picnic at Boyle's Park, a beautiful wild park of 230 acres with splendid oaks and sweet gums and sycamores, just outside the city of Little Rock, tufted tits and blue jays shared our lunch. Here we heard,

besides wood thrushes and prothonotary warblers, three vireos—white-eyed, red-eyed and yellow-throated. On our way home we learned that red-headed woodpeckers had been driven from their hole in a telegraph pole by a pair of "short-tailed, yellow-billed blackbirds" that had raised a family themselves, the first time we had heard of starlings nesting in Little Rock. This alien is extending its nesting range to the southwest, breeding now in scattered towns throughout the northern half of Arkansas.

By the end of April winter birds had left Crip's Hill, but each day brought new visitors most to pass by, a few to stay. The haunting melody of the gray-cheeked thrush, heard for ten days from April 29th, compensated in some measure for the loss of those sweetest of singers, the white-throats. As to summer residents, orchard orioles and ruby-throated hummingbirds visited the cups of sweetened water, crested flycatchers whooped and fought each other and the bluebirds, and the catbird sang very early and very loud after his arrival May 6th. Strangely enough, we heard not one song from the two pairs of robins nesting near the house until May 5th, when both had young a few days out of the nest.

Fantastic trunks of cypress, Hill's Lake.

One of the delights of this time of year lay in the baby woodpeckers. Father Downy, banded as a fledgling in May 1943 and carrying a red ring, was busy feeding two fluffy, fresh-looking babies with red caps; the three stayed around from April 30th to May 11th. Another father banded only with aluminum, fed two black-headed babies as late as the 12th. Probably the first two were sons, the second daughters, but

occasionally young males have black caps and females red ones. One day Father pecked his child, then continued to feed him. Later in the morning a baby raised his crest, flapped his wings and pecked Father; Father gave him suet. Once a baby flapped his wings and pursued a cardinal, but at another time a tufted tit chased off a young downy. Only one mother downy was seen; she was caught and proved from her band to be two years old. So far as we could see, she paid no attention to any children. Father woodpeckers are famous for their parental devotion; it is they who assume the major part of incubation and care of the young.

A pair of handsome red-bellied woodpeckers stayed with us from April 25th to May 18th; on this date the mother was caught and her record showed she had been banded in November 1941. She was once seen feeding her child at the table, holding her head sidewise, like the downies. Her eyes were red in contrast to the brown ones of her offspring. As for father, he faithfully fed his large baby, grey-headed with a slightly reddish cap. On May 16th he carried a bit of peanut to the youngster, gave it to him, then pecked at him twice; baby flew to the next tree and father pursued him. Later baby got peanuts by himself and drank from the syrup cup. Red-bellied woodpeckers dominate at the feeding shelf, even thrashers and mockingbirds giving way before them.

Four pairs of tufted tits patronized the feeding shelves although only one pair—the male Yellow-left and his mate Red-left—nested on the grounds. Last year Yellow-left's mate had been Green-left, but this year her husband was Black-right-above. Green-left had been banded as a juvenile two years before, while Red-left was five years old, yet Green-left dominated Red-left at the feeding shelf, at one time even giving her a peck. Seven fluffy babies of Yellow-left and Red-left were banded in April 21st, and fledged five days later; on May 5th we heard calls of *see-beck see-beck,* and here came the family — three or four children with nearly full length tails, quivering their wings at approach of parent or brother. Both parents fed them until the 22nd when they must have been six weeks old, two weeks longer than the usual custom with many passerines.

Another visitor to the peanut butter was a young mockingbird with nearly full length tail, striped breast and yellow inside the mouth; he called for food with a loud whine and shivered his wings when his father, White, fed him. When his mother came to the shelf, he gave a frantic demonstration, but she, occupied with a new nest, flew at him and buffeted him.

It was bird watching de luxe to study the Carolina wren's nest from bed. Ancient wakened us early each morning with his spirited songs; Serena incubated her five eggs for very long periods (averaging an hour

Arkansas River, Pinnacle Mountain in distant center.

and a half in length) and left them for half an hour at a time. After the babies hatched, Ancient brought most of their food at first, while Serena brooded. As they grew, she became more and more enthusiastic over feeding them, swinging in under the porch roof with cranefly or caterpillar so often that Ancient spent most of his energies playing policeman on the nearest oak, *chuning* at the jays who paid not the smallest attention.

Our longest trip was to Petit Jean Mountain sixty-five miles northwest. We drove through pleasant countryside, past picturesque Pinnacle Mountain, past woods and ferns and hilly pastures. Petit Jean (pronounced Petty Jane), lying between the Ouachitas to the south and Ozarks to the north, is an ancient flat-topped peak rising abruptly 800 feet above the Arkansas River; it extends thirty miles in the shape of a great horseshoe. The top is level, partly farmed and partly covered with second growth forest. We visited Dr. and Mrs. T. W. Hardison who have lived on the mountain for many years. A magnificent view of the Arkansas valley, of Petit Jean and more distant mountains spread out before us, while beside us sang a pine warbler and summer tanager. Dr. Hardison, who has been largely responsible for the mountain having been made into a State Park, showed us treasures he had found here:

Indian relics, an immense stem of a fossil tree-fern fifty million years old, and strange, pecan-like seeds of another tree-fern that grew here two hundred million years ago.

We drove and clambered about, enjoying great ledges, spectacular falls, curious turtle-shaped rocks, splendid short-leaved pines, curious little sundews, and masses of golden coreopsis. There were many birds, among them chipping sparrows and phoebes, black and white warblers and yellow-breasted chats and right by the Lodge, a heavenly wood thrush. We watched the sunset from in front of the Lodge, a marvellous view of deep valley between high cliffs. The chuck-will's-widow gave its eerie chant; two black vultures flapped their way silently overhead then came to rest in a pine. On the opposite side of the canyon three turkey vultures came to roost in a dead tree. Venus shone and then Jupiter and a little later Mars and Saturn, Spica and Arcturus, Regulus, Castor and Pollux. Beauty to be remembered as a charm against the petty cares of every day.

Short-leaved pines by the Arkansas River.

On Crip's Hill, on May 26th the baby wrens were two weeks old. Ancient came several times to the basket without food, looked in and flew off, then gave loud songs from the nearest oak. Four babies

scrambled up on the edge. Serena arrived, scolded and fed the baby inside; she scolded again and all disappeared. But the next minute three clambered up again; she went into the box without food and all followed her. Ancient started to sing once more in the oak, three young appeared and two flew to the eaves. Serena brought food and with coaxing notes got some of the brood back into the box. But when one baby flew wildly and landed on the floor, Serena gave up trying to get her children back home and, like Ancient, tried to get them out and away. She brought food but did not surrender it, leading the hungry children into the garden. Soon the whole family was started down the hill and into the woods.

On my last morning in Arkansas, the 28th of May, there was still adventure on Crip's Hill. Just forty-six days earlier Mrs. Thomas had noted the jays starting to build in the post oak by the porch; now two engaging, stubby-tailed babies were ready to explore the world and came tumbling to the ground.

Crip was followed to the shelf by his two large children, hatched thirty-one days before; he fed them, but their mother ran at them. Red came with no fewer than four fine youngsters; one of them begged from Crip who made a dab at it. Then two made the mistake of begging from Mrs. Crip; she rushed at them viciously. As we drove away, we heard Crip singing from the top of an oak in his finest tones, loud and clear, a fitting ending to a rich and happy experience.

Discovering Beauty

Sometimes when walking in the woods I have paused before some bush or tree with a premonition that something of interest was hidden therein, and quietly and intently watching for a few moments have discovered some bird or other animal which seemed to have flashed me a spiritual signal. These revelations have never seemed to me to be wholly accidental. On the contrary, they have appeared to be direct responses to intense interest and longing. There is a beautiful legend of a golden tulip which longed unspeakably to be a bird, and forthwith the tulip was transformed into an oriole.

If one desires sufficiently he may discover many things. If his soul is filled with an unutterable longing for something, behold it is revealed to him. It is thus that we find beauty in the world.

Samuel A. Harper

Notes from the Field

* * *

Notes on the Red-headed Woodpecker

Our red-headed woodpeckers have used the power company's tall pole for fourteen years, at least. There are 23 perforations in it, twenty facing east and three oppositely oriented. Fifteen are in various stages of incompleteness; eight, all facing east, either have been used to rear broods or have been made commodious enough for that purpose.

Not only in the breeding season do these birds make the pole their headquarters. It is the point from which many of their insect-catching sallies are made. A metal band near the top is a fine sounding-board. Seemingly, too, much of the surface is used for drilling practice. There is a difference between the tap-tap of the red-head's bill when it is excavating a nest hole, or a retired wood-borer, and the resonance of its peremptory drumming. One can tell, when the sound comes from within the pole, whether the bird is engaged in enlarging the cavity or signalling to its kind outside.

Long after the brood has flown and is tolerated no longer by its parents—late in August or in early September—a bird will stand before the nest hole, repeat its raucous note several times and dive in. Then will be heard a muffled drumming inside and, presently, another woodpecker will appear and, in its turn, stand before the nest hole. With a rush the occupant emerges and the birds take flight together. If by chance one of the black-headed young appears both will drive at it wickedly.

Though its season be far gone these activities seem related to the reproductive cycle. One sees in them and other out-of-season displays—such as mating attempts in fall and autumn singing—how continuing life requires the living animal, amid all circumstances and in all seasons, to be moved constantly, in greater or less degree, by its generative purpose.

E. R. Ford, Newaygo, Mich.

Museum Activities

Museum Lobby now has Bears

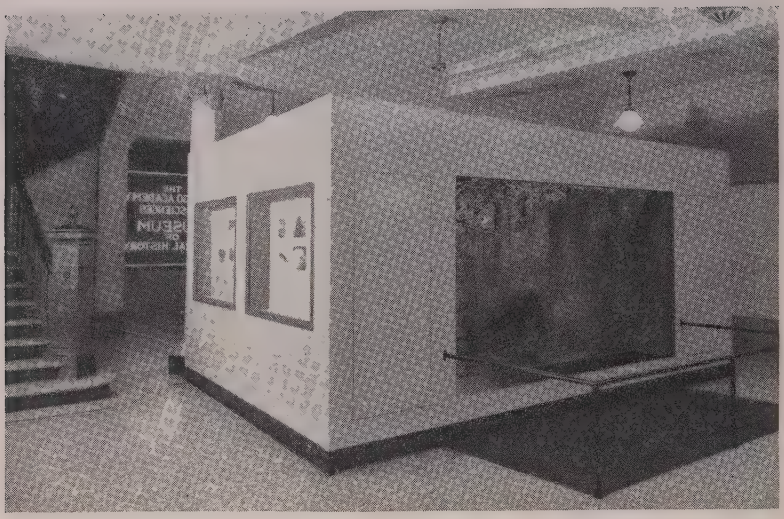
A new exhibit, one of the largest constructed at the Academy during the last ten years, has been installed in the museum lobby. It consists of a "family group" of black bears, a mother and two cubs, in an autumn setting among oaks and aspens.

The cubs illustrate two color phases of the black bear: one of the usual black, the other brown or "cinnamon." The brown phase is not uncommon, particularly in the western part of the range of the species. According to Seton *(Lives of Game Animals,* vol. 2, 1929, pt. 1, p. 121), a black mother may have cinnamon young one year and black the next, or even one of each kind in the same litter. Also a cinnamon mother may give birth to either black or cinnamon young.

The black bear was once widely distributed in North America but it has been many years since it was found in the Chicago Region.

The bears in the new exhibit were mounted by Earl G. Wright, former curator of exhibits, during the early 30's and for a time occupied a prominent position on the second floor. When the Chicago Environs Hall was remodeled in 1936, they were placed in storage. The present display was planned and constructed under the direction of Thurston I. Wright, chief preparator and custodian of exhibits, with the assistance of Fred H. Jaeger, Jr., artist and assistant preparator, and John Kaminski, carpenter. The background was painted some years ago by the late Charles A. Corwin, formerly of the staff of the Field Museum (now Chicago Natural History Museum).

The case, all new construction designed for the special requirements of the bears and its location in the center of the lobby, was built on the spot. Fluorescent lighting has been used throughout. At the sides and rear are recessed "wall cases" for display of paintings, photographs, publications, and other small or flat objects, providing for a variety of lobby exhibits as needs arise. The



flat cases against the north and south walls, in which temporary displays have appeared from time to time, have been removed.

The Academy's Lectures

The customary free public lectures on Sunday afternoons were not given during the past season. As stated on page 34 of this issue, the Academy's operating expenses have greatly increased and its present income is inadequate for the maintenance of normal personnel and activities. It is hoped that the Sunday lecture series may be resumed in the near future. The Trustees of the Academy are considering possibilities for remodeling the lecture room and plans for the coming season will be announced later.

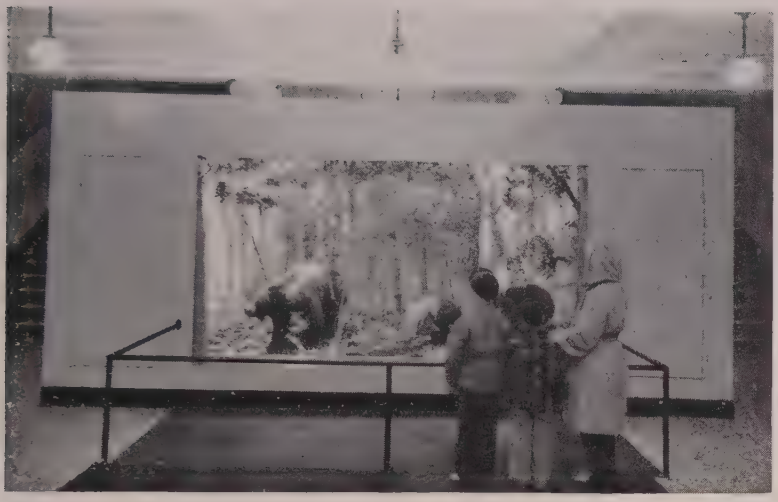
Members are urged to continue their financial support, increasing it if possible, in order that services to the community at large as well as to members may be extended rather than curtailed.

Annual Meeting

The 91st Annual Meeting of the Academy was held at 8:00 P. M., April 14, 1948. The following officers were re-elected: Dr. Nathan S. Davis, President; Dr. W. F. Henderson, First Vice-President; Dr. Leslie Brainerd Arey, Second Vice-President; and Hulburd Johnston, Secretary.

John Nash Ott, Jr. was elected Trustee to fill the remainder of the unexpired term of the late Lewis C. Walker (1948-49); John M. Budd and George J. Leahy were elected Trustees (1948-53 and 1948-52, respectively). Mr. Budd is president of the Chicago and Eastern Illinois Railroad and Mr. Leahy president of the Litchfield and Madison Railroad.

Dr. William E. Powers of Northwestern University and Dr. Charles E. Olmsted of the University of Chicago were re-elected Scientific Governors for three years (1948-51).



Dr. Max E. Britton (botany) and Dr. Albert Wolfson (zoölogy), both of Northwestern University, were re-appointed Scientific Associates for the current year, and Dr. Laurence L. Sloss (invertebrate paleontology) of Northwestern University and Dr. Eliot C. Williams, Jr. (invertebrate zoölogy), Roosevelt College, were appointed Scientific Associates for 1948-49.

At the annual meeting of the Board of Trustees, held following the meeting of the Academy, Walter A. Grau, assistant cashier, First National Bank of Chicago, was re-elected Treasurer.

Dr. Williams to Wabash College

Dr. Eliot C. Williams, Jr., former assistant director of the Academy, has accepted a position as Associate Professor of Zoölogy at Wabash College, Crawfordsville, Indiana, beginning with the fall semester next September. The new location offers excellent opportunities for teaching and research in the field of his specialization. His resignation from the Academy staff (September, 1947) to become Assistant Professor of Biology at Roosevelt College, Chicago, was accepted with keen regret and he has been greatly missed during the last year.

Recent Publications

Since the last issue of the Naturalist the following have been published:

Bulletin, Volume 8, Number 1, "The Influence of the Balcones Escarpment on the Distribution of Amphibians and Reptiles in Texas," by Hobart M. Smith and Helmut K. Buechner, September 15, 1947, pages 1-16, 1 map, price 30 cents.

Number 2, "The Reptiles and Amphibians of Eastern Central Illinois," by Philip W. Smith, October 30, 1947, pages 21-40, 1 map, 25 cents.

Number 3, "Observations on *Batrisodes* (Coleoptera: Pselaphidae), with Particular Reference to the American Species East of the Rocky Mountains," by Orlando Park, December 30, 1947, pages 45-132, 11 plates, $1.60.

Number 4, "Checklist of the Genus *Batrisodes* (Coleoptera: Pselaphidae)," by Orlando Park, April 15, 1948, pages 137-169, 75 cents.

Number 5, "A Preliminary Key to the Genera of Clavarioid Fungi," by Maxwell S. Doty, May 11, 1948, pages 173-178, 25 cents.

Publications, continued

Natural History Miscellanea, Number 9, "Observations on the Denning Habits of the Prairie Rattlesnake, *Crotalus viridis viridis* (Rafinesque)," by Paul Anderson, September 20, 1947, 2 pages.

Number 10, "Notes on the Eggs and Early Larvae of Three Florida Salamanders," by Coleman J. Goin, October 20, 1947, 4 pages, 7 figures.

Number 11, "The Banded Water Snake, *Natrix sipedon fasciata,* in Texas," by Hobart M. Smith and W. Leslie Burger, November 3, 1947, 1 page.

Number 12, "Notes on the Courtship and Mating Behavior of Certain Snakes," by Howard K. Gloyd, November 26, 1947, 4 pages.

Number 13, "Regeneration of Clipped Subcaudal Scales in a Pilot Black Snake," by Roger Conant, March 5, 1948, 2 pages.

Number 14, "A Record of the Bat, *Pipistrellus subflavus,* in Northwestern Illinois," by James R. Beer and Fredrick Greeley, March 15, 1948, 1 page.

Number 15, "A Population of the Carolina Anole," by Fred R. Cagle, March 18, 1948, 5 pages, 2 figures.

Number 16, "*Oedogonium chapmanii* sp. nov. from New Zealand," by Lewis Hanford Tiffany, April 15, 1948, 2 pages, 1 plate.

Number 17, "Description of a Neglected Subspecies of Rattlesnake from Mexico," by Howard K. Gloyd, April 23, 1948, 4 pages, 3 figures.

Number 18, "Intergradation in Worm Snakes (*Carphophis*) from Kentucky," by Albert G. Smith, May 7, 1948, 3 pages.

Number 19, "Urogenital Deformities in two Species of Snakes," by Richard A. Edgren, Jr., May 10, 1948, 3 pages, 1 figure.

Active members of the Academy may obtain the scientific publications without charge upon request. Others may purchase the numbers of the *Bulletin* at the prices listed above and the *Natural History Miscellanea* at five cents each.

New Members

The following were recently elected to membership in the Academy:

Life: Dr. Louis E. Laflin, Jr., Lake Forest; George J. Leahy, Albert G. Smith, and Dr. Eliot C. Williams, Jr., Chicago.

Sustaining: John M. Budd, Chicago.

Annual: Miss Orpha L. App, Lafayette, Indiana.

Associate: Leslie Banks, A. T. Burch, Harry Hoogstraal, and Miss Blanche D. Skudero, Chicago; Dr. Tom Daggy, Davidson, North Carolina; Dr. Hobart M. Smith, Urbana; Mrs. Lawrence B. Perkins and Theodore M. Switz, Evanston.

Field Work

In early October, 1947, Dr H. K. Gloyd and Thurston I. Wright returned to South Dakota for further observations and additional motion pictures of rattlesnake dens (see *Chicago Nat.,* vol. 9, 1946, no. 4, p. 87-97). They were again the guests of A. M. Jackley of the South Dakota Department of Agriculture with whom they visited many prairie dog towns and rattlesnake colonies in the western half of the state. The party included Dr. Charles E. Burt of Topeka, Kansas, and Paul Anderson of Independence, Missouri.

Favorable weather conditions permitted the capture of nearly 300 snakes, mostly rattlers, and the making of an outstanding series of pictures, climaxed by the catching of fifty rattlesnakes in one spot at the famous den on Thunder Butte in Ziebach County. A duplicate of the film, "Hunting the Prairie Rattlesnake," has been prepared for the South Dakota Department of Agriculture.

Local field work by Mr. Wright and Fred H. Jaeger, Jr. has been continued and new specimens have been added to the exhibits and study collections.

Volunteer Assistance in Herpetology

During the past several months Albert G. Smith, Assistant Professor of Biology, Loyola University, has spent three half-days a week in the laboratory assisting Dr. Gloyd in cataloging and other curatorial work with the scientific collection of amphibians and reptiles. He is curently studying some of the Academy's material in connection with his own investigations.

Back Numbers of *The Chicago Naturalist*

Complete sets of the Naturalist, Volumes 1 to 10, inclusive (with the exception of Volume 6, Numbers 1 and 2), are now offered at $2.00 net; single numbers at 10 cents each.

Numbers 1 and 2 of Volume 6, published during the war, were printed in an unusually small edition and the few copies remaining are reserved for libraries with which the Academy maintains permanent exchanges.

The Naturalist's Book Shelf

Book Notices

Guide to the Literature of the Zoological Sciences

By Roger C. Smith

Burgess Publishing Co., 426 S. Sixth St., Minneapolis 15, Minn. Revised, 1945, vii, 114 pages, index. Paper, $2.00.

Insect Microbiology

By Edward A. Steinhaus

Comstock Publishing Co., Ithaca, N. Y., 1946, xiv, 763 pages, 250 figures, bibl., index, Cloth, $7.75.

Insect Dietary

By Charles T. Brues

Harvard University Press, Cambridge, Mass., 1946, xxvi, 466 pages, 22 halftones, 68 line drawings, bibl., index. Cloth, $5.00.

The Puma, Mysterious American Cat

By Stanley P. Young and Edward A. Goldman

American Wildlife Institute, 822 Investment Bldg., Washington 5, D. C., 1946, xiv, 358 pages, 1 color plate, 92 halftones, 6 text figures, bibl., index. Cloth, $4.00.

Sketches of American Wildlife

By Stanley Paul Young

Monumental Press, 3110 Elm Ave., Baltimore 11, Md., 1946, xii, 143 pages, 50 halftones, index. Cloth.

Jungle in the Clouds

By Victor Wolfgang von Hagen

Duell, Sloan and Pearce, Inc., 270 Madison Ave., New York 16, N. Y., 1946, x, 267 pages, many illus., bibl., index. Cloth, $3.50,

Marine Microbiology

By Claude E. ZoBell

Chronica Botanica Co., Waltham, Mass., 1946, xvi, 240 pages, 12 figures, bibl., index. Cloth, $5.00.

Fishes of the Great Lakes Region

By Carl L. Hubbs and Karl F. Lagler

Cranbrook Institute of Science, Bloomfield Hills, Mich., 1947, xi, 186 pages, 26 color plates, 32 plates of halftones, 50 figures in text, bibl., index. Cloth, $3.00.

Book Notices

A Multitude of Living Things

By Lorus J. Milne and Margery J. Milne

Dodd, Mead and Co., 432 Fourth Ave., New York, 1947, 278 pages, 23 halftones, index. Cloth, $4.00.

Science Since 1500

By H. T. Pledge

The Philosophical Library, 15 East 40th St., New York 16, N. Y., 1947, 357 pages, 15 plates, index. Cloth, $5.00.

Photoelectric Cells

By A. Sommer

Chemical Publishing Co., Inc., 26 Court St., Brooklyn 2, N. Y., 1947, viii, 104 pages, 27 line drawings. Cloth, $2.75.

Birds in the Garden

By Margaret McKenny

University of Minnesota Press, Minneapolis 14, Minn., 1939, reprinted Sept., 1947, 349 pages, 16 color plates (by Allan Brooks *et al.*), 32 halftones, bibl., index. Cloth, $5.00.

Hermon Carey Bumpus, Yankee Naturalist

By Hermon Carey Bumpus, Jr.

University of Minnesota Press, Minneapolis 14, Minn., 1947, 141 pages, 13 halftones, index. Cloth, $2.50.

Exploring Our National Parks and Monuments

By Devereux Butcher

Oxford University Press, New York, 1947, 160 pages, many halftones. Obtainable from National Parks Association, 1214 Sixteenth St., N. W., Washington 6, D. C. Paper, $1.75. Cloth, $2.75.

A Taxonomic Study on the Grasses of Pennsylvania

By Richard Walter Pohl

American Midland Naturalist, Vol. 38, 1947, No. 3, p. 513-604, 1 map, index. Notre Dame, Ind. Paper, 90 cents.

The Essentials of Plant Biology

By Frank D. Kern

Harper and Bros., 49 East 33rd St., New York 16, N. Y., 1947, vii, 440 pages, many illus., index. Cloth, $4.00.

Gem Testing

By B. W. Anderson

Emerson Books, Inc., 251 W. 19th St., New York, 1948, x, 256 pages, colored front., 53 figures, bibl., glossary, index. Cloth, $5.00.

Nature Quests and Quizzes

By Raymond Tifft Fuller

The John Day Co., Inc., 2 West 45th St., New York, 1948, 64 pages. Cloth, $1.50.

Index to Volume 10

1947 - 1948

Annual Meeting 26, 52
Arey, L. B. 26, 52
Auditorium 26, 52
bear, black 51
Beecher, W. J. 27
Bird-banding Conference 27
Black-eyed Susan, by L. Young Correthers 14
Book Notices 32, 55-56
Bradley, H. E. 26
Britton, Max E. 53
Budd, John M. 52, 54
Burfeind, Nat T., Eugene H. Garnett 24
Carlson, Margery C., Some roadside flowers of Central America 10-14
Chastine, La. 15
Chastine revisited, by Karl P. Schmidt 15-20
Cheney, John Vance, The Wood Thrush 20
Children's programs 27
Chimaphila 40
Clay, W. M. 28
Correthers, L. Young, Black-eyed Susan 14
Cox, W. D. 26
Creston, La. 15
Davis, N. S. 26, 52
Discovering beauty, by S. A. Harper 49
El Salvador 10
Exhibits 27, 51
Field work 28, 54
Ford, E. R. 9
  Naturalist, The 41
  Notes on the red-headed woodpecker 50
  Review by 30
Fuller, G. D., Illinois wintergreens 39-41
Garnett, Eugene H., by Nat T. Burfeind 24
Gaultheria 40
Gloyd, H. K. 28, 54
  Review by 31
Grau, Walter A. 26, 53
Guatemala 10
Hale, George E. 3
Harper, S. A., Discovering beauty 49
Henderson, W. F. 26, 52
Illinois wintergreens, by G. D. Fuller 39-41
Jaeger, F. H., Jr. 31, 51, 54
Johnston, Hulburd 26, 52
Kenwood Observatory 3, 4
Laflin, L. E., Jr. 26, 54
Late spring in Arkansas, by Margaret Morse Nice 42-49
Leahy, George J. 52, 54
Lectures 26, 52
Lund, J. H , Reviews by 30
McDonald Observatory 3, 5
Members 26, 54
Naturalist, The, by E. R. Ford 41
Naturalist's Book Shelf 29, 53
Nice, Constance, Raising raccoons wholesale 35-38
Nice, Margaret Morse, Late spring in Arkansas 42-49
Officers 26, 52
Olmsted, C. E. 52
Ott, John Nash, Jr. 26, 52
  Time-lapse photography 21-23
Park, Orlando 26
Publications 27, 53-54
Pyrola 39, 40
Raccoons 35-38
Raising raccoons wholesale, by Constance Nice 35-38

REVIEWS:
  Carpenter, S. J. *et al.*, The mosquitoes of the southern United States, by R. L. Wenzel 29
  Conant, R., Reptiles and amphibians of the northeastern states, by H. K. Gloyd 31

Cooper, H. J., Scientific instruments 31
Hausman, L. A., Field book of eastern birds, by E. R. Ford 30
Spencer, L. J., A key to precious stones, by J. H. Lund 30
Whitlock, H. P., The story of the gems, by J. H. Lund 30

Schlesinger, F. 7
Schmidt, K. P., Chastine revisited 15-20
Science talent search 28
Scientific Associates 53
Scientific Governors 26, 52, 53
Sloss, Laurence L. 53
Smith, Albert G. 54, 55
Some roadside flowers of Central America, by Margery C. Carlson 10-14
Stille, W. T. 26
Struve, Otto, The Yerkes Observatory of the University of Chicago 2-9
Powers, W. E. 26, 52
Tiffany, L. H. 26
Time-lapse photography, by John Nash Ott, Jr. 21-23
Trustees 21, 24, 26, 27, 34, 52, 54
Walker, L. C. 27
Waterfowl Conference 28
Wenzel, R. L., Review by 29
Williams, E. C., Jr. 28, 53, 54
Wintergreens 39-41
Wolfson, Albert 53
woodpecker, red-headed 50
Wood Thrush, The, by John Vance Cheney 20
Wright, E. G. 51
Wright, T. I. 51, 54
Yerkes Observatory, by Otto Struve 2-9

Linnaeus had nothing on me

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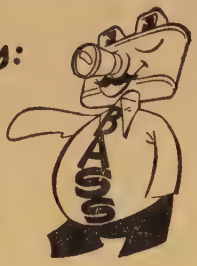

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